

A Retrospective Survey of the Incidence of Hypertension in Abia State-Nigeria

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Abstract: Hypertension is becoming more common as urbanization increases and this has been shown in several studies all over the world especially in Africa. This study was carried out to survey the incidence of hypertension in Abia State using Aba metropolis as the case study from 1995 - 2005, so as to make recommendations that would help modify life style of the people, thus helping to reduce the growing incidence of hypertension related complications such as stroke, heart failure, kidney failure, heart attack etc. It was a cross sectional study with data collected from four different hospitals in Aba, Abia State. The data was tabulated, compared and analyzed using percentage. From the result, it was observed that the incidence was higher in men than in women. Also, the incidence appeared to have dropped in 1995 and 1996. All other years recorded increased incidence with 2005 having the highest percentage. The total incidence and percentage incidence were worked out and represented in a bar chart. The result showed an increased incidence from 5.5% in 1995 to 14.7% in 2005, showing an increase of 9.2% over 11 years period, which amounts to an average increase of 0.8% annually. The incidence of Hypertension increases as the year goes by, hence the need for life style modification.

Keywords: High blood pressure, Cardiovascular disease, Morbidity, Mortality, Nigeria.

INTRODUCTION

Hypertension or High Blood Pressure is a cardiac chronic medical condition in which the system arterial blood pressure is elevated. It is the opposite of hypotension. It is classified as either primary (essential) hypertension or secondary hypertension. 90 - 95% of cases categorized as primary hypertension implying high blood pressure with no obvious medical causes [1]. The remaining 5 - 10% of cases is caused by other conditions that affect the arteries, heart or endocrine system [2].

Hypertension is emerging as a considerable challenge to public health and an important cause of morbidity and mortality [3]. It is a major contributor to atherosclerotic cardiovascular disease. However hypertension is much more than a "cardiovascular disease" because it affects other organ systems of the body such as kidney, brain, and eye [4].

According to researchers, hypertension ranked fourth as a contributor to premature mortality and disability for developed countries, and seventh for developing countries in 1990[5]. In 2000 it was estimated that nearly one billion people or about 26% of the adult population had hypertension worldwide, it was common in both developed (333million) and undeveloped (639million) countries [6].

It is a silent killer that is associated with increased risk of stroke, congestive heart failure, kidney failure and heart attack; when it exists with obesity, smoking, high blood cholesterol or diabetes, the risk of heart attack or stroke increase several times [7,8]. The situation in India is more alarming. Hypertension is directly responsible for 57% of all stroke deaths and 24% of all coronary heart disease deaths in India [9].

Hypertension is becoming more common as urbanization increases and this has been shown in several studies all over the world especially in Africa [10]. A number of studies on the prevalence of hypertension have revealed that hypertension appears to be lower in rural than urban areas, in male than in female and in young than in adult [3]. According to Richarch's study; just 7% of the group in rural Nigerians had high blood pressure with increased rate in urban areas [11]. A study in Ghana showed the prevalence of hypertension of 4.5% among rural dwellers and 8% - 13% in the town. In fact more recently the prevalence of hypertension in urban Accra was found to be 28.3% [12]. Other research carried out on hypertension in Nigeria's civil servants reveals that male urban civil servants appeared to have a risk of hypertension similar to United States African-American males [13].

Also a study on India population has shown that, the rate of hypertension is as low as 3.4% in men and 6.8% in women in rural and as high as 68.9% in men and 72.5% in women in Poland [14]. However, other studies revealed that the prevalence of hypertension

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was higher in men than women, whereas in Accra the reverse was found [12]. In general, no clear pattern of association between hypertension and gender has emerged. In the International Study of Hypertension in Blacks, for example, there was a higher prevalence of hypertension in men than women in Nigeria and urban Cameroon, but in rural Cameroon the prevalence was higher in women [10].

The prevalence of hypertension in the United States is increasing despite increased awareness of the importance of controlling blood pressure [15]. In a recent study the prevalence was found to be 28% in North America and 44% in Western Europe [16]. Other study shows that in 1995 the prevalence of hypertension in the US was 24% of the adult population. And by 2004, the prevalence increased to 29%. It is more common in African-Americans and Native Americans and less in Caucasians and Mexican Americans [17-19].

The health related problems associated with hypertension gives a serious concern to the public as well as health care professionals in the control of High Blood Pressure as may be seen in the action of World Hypertension League who organized a global awareness campaign on hypertension in 2005 with the mind of creating awareness to those who are unaware of their condition [20].

In the view to achieve near normal blood pressure, life style modifications should be recommended. For mild or moderate hypertension, life style modifications should be attempted for 3 - 6 months prior to initiating drug therapy. Therefore this study is aimed to survey the incidence of hypertension in Abia State (Aba precisely) and make recommendations that would help modify the life style of the people, thus helping to limit the growing incidence of hypertension related complications.

MATERIALS AND METHODS

The data used for this study were collected from four different hospitals in Aba, following records of their good performances in medical practice, record keeping inclusive. These hospitals include - Abia State University Teaching Hospital Aba, Life Care Clinic Eziukwu Road Aba, Living Word Hospital Aba/Owerri Road Aba, New Lead Hospital Ohiagu Street off Faulks Road Aba, Nigeria. It was a collection from different hospitals to ensure appropriate comparison of the incidence.

The data were collected through personal contact with the Chief Medical Directors and subsequent writing of application requesting for the data. On approval, the data were finally collected from the medical records department of the hospitals. The data showed the sex and age of patients and other medical information of the patients. The data were copied directly from the patient's folders, and questions were asked where necessary. All folders for each hospital visited were checked. This work did not distinguish between the death and existing patients.

Data were subsequently tabulated and compared. The total incidences were worked out by adding all the records from 1995 to 2005 for each sex from each hospital and finally, they were summed up together. The percentage incidence were also worked out by dividing individual numbers by the total incidence and multiplied by 100. They were finally summed together and represented in a bar chart as shown in the result.

RESULTS

The results of this study are shown in Tables 1 to 5 and Figures 1 to 5. Where as Table 1 to 4 represent the summary of the incidence and percentage of hypertension from 1995 - 2005 as seen in various Hospital viz Abia State University Teaching Hospital, Life Care Hospital, Living Word Hospital and New Lead Hospital Aba respectively. Figure 4.1 to 4.4 represent the bar chart for each of Table 1 to 4. Table 5 is the summary of the incidence and percentage of hypertension from all the four hospitals from 1995 - 2005 Figure 5 represents the bar chart of Table 5.

Table 1 and Figure 1 recorded incidence and percentage of hypertension of 6.3% in 1995, 5.7% in 1996, 6.8% in 1997, 7.4% in 1998, 6.4% in 1999, 8.8% in 2000, 9.8% in 2001, 10.4% in 2002, 11.1% in 2003, 12.2% in 2004 and 15% in 2005.

Table 2 and Figure 2 showed 5.4% in 1995, 5.5% in 1996, 6.7% in 1997, 8.2% in 1998, 8.2% in 1999, 8.5% in 2000, 9.5% in 2001, 10.6% in 2002, 11.5% in 2003, 12.8% in 2004 and 13% in 2005.

Table 3 and Figure 3 recorded an incidence and percentage of hypertension of 3.8% in 1995, 4.2% in 1996, 4.4% in 1997, 5.3% in 1998, 6.6% in 1999, 6.8% in 2000, 13.3% in 2001, 13% in 2002, 13.6% in 2003, 13.9% in 2004 and 15.4% in 2005.

In Table 4 and Figure 4 a percentage of 4.8% was in 1995, 5.2% in 1996, 7.1% in 1997, 6.9% in 1998,

7.8% in 1999, 8.1% in 2000, 8.1% in 2001, 8.3% in 2002, 11.6% in 2003, 14.5% in 2004 and 17.6% in 2005.

The summary of the results of the four hospitals shown in Table 1 to 4 and Figure 1 to 4, are shown in Table 5 and Figure 4.5. The following were observed. 5.5% in 1995, 5.3% in 1996, 6.4% in 1997, 7.3% in 1998, 7.2% in 1999, 8.3% in 2000, 10.1% in 2001, 10.7% in 2002, 11.7% in 2003, 12.9% in 2004, and 14.5% in 2005.

From the results, it was observed that the incidence was higher in men than women (Table 5 and Figure 5). Although some researchers have shown that the incidence is higher in men than in women below the age of 35 years, but by the age of 65 years the prevalence becomes higher in women, but this study is never intended to distinguish between ages.

Also from the results, the incidence appeared to have dropped in 1995 and 1996 as seen in Table 1, Figure 1, Table 5 and Figure 5. There was also reduced incidence in 2002 from Table 3 Figure 3. Between 1998 and 1999, Table 2 and 4, Figure 2 and 4 showed no variation. All other years recorded increased incidence with 2005 recording the highest percentage

However the incidence of hypertension is increasing in Abia State as studied in Aba Metropolis from 5.5% in 1995 to 14.7% in 2005 showing an increase of 9.2% in 11 years, which amounts to an average increase of 0.8% annually.

DISCUSSION

The study of the incidence of hypertension is a vital one as this will help create awareness to people on the prevalence of hypertension and suggest ways to control it, hence, the aim of this study. Seeing that hypertension is associated with a lot of complications, the public as well as the health professionals are concerned about it.

A number of researches reveal the danger in hypertension. They called it a silent killer [7] as may be seen among Indians. According to research, hypertension is directly responsible for 57% of all stroke deaths and 24% of all coronary heart disease deaths in Indian [9]. Again, even moderate elevation of the arterial blood pressure shortened life expectancy [21].

Although this study is never intended to reveal the prevalence in urban and rural areas, other studies reveals that as urbanization increases hypertension becomes more common. In Ghana, rural dwellers have lower prevalence than urban dwellers [12]. In Nigeria also, the research carried out on civil servant reveal a higher prevalence in semi-urban than in rural villages, likewise Indian population [13, 14].

From the result of this study it was observed that the incidence is higher in men than in women. This agrees with some researchers who showed higher incidence in men than in women (though menopause tends to decrease this difference). In contrast, in India the rate of hypertension is low in men than in women [14].

Also this study showed an increase in the incidence of hypertension in Abia state as studied in Aba metropolis from 5.5% in 1995 to 14.7% in 2005, showing an increase of 9.2% in 11 years. This agrees with that of the United States which increase from 24% in 1995 to 29% in 2004 [17]. This implies that incidence increases as the year progresses. That is to say, if nothing is done urgently there will be an exponential increase of hypertensive patients in Abia State, Aba precisely.

Hence, the need for more enlightenment and awareness campaign on good life style modification which includes dietary changes, physical exercise and weight loss, as did the World Hypertension Leagues in 2005[20].

CONCLUSION

The study has gone a long way in given enlightenment about hypertension and its incidence. The following conclusions were deduced from the study:

- The incidence is more in urban than rural as seen in so many studies.
- No clear pattern of association between hypertension and gender has emerged.
- Hypertension is seen in all classes of people although more prevalent in low socio-economic class.
- Hypertension incidence increases as the year goes by as seen in this study and that of the United States. This calls for urgent attention.

Table 1: Summary of Incidence and Percentage of Hypertension from 1995 to 2005 as Seen in Abia State University Teaching Hospital Aba

Year	Incidence and Percentage in Male		Incidence and Percentage in Female		Total Incidence and Percentage	
	M/I	%	F/I	%	T/I	%
1995	52	52.0	48	48.0	100	6.4
1996	44	49.4	45	50.6	89	5.7
1997	60	56.1	47	43.9	107	6.8
1998	66	56.9	50	43.1	116	7.4
1999	50	50.0	50	50.0	100	6.4
2000	78	56.5	60	43.5	138	8.8
2001	80	51.6	75	48.4	155	9.8
2002	88	53.7	76	46.3	164	10.4
2003	95	54.3	80	45.7	175	11.1
2004	105	54.7	87	45.3	192	12.2
2005	130	54.6	108	45.4	238	15
Total	848	53.9	726	46.1	1574	100

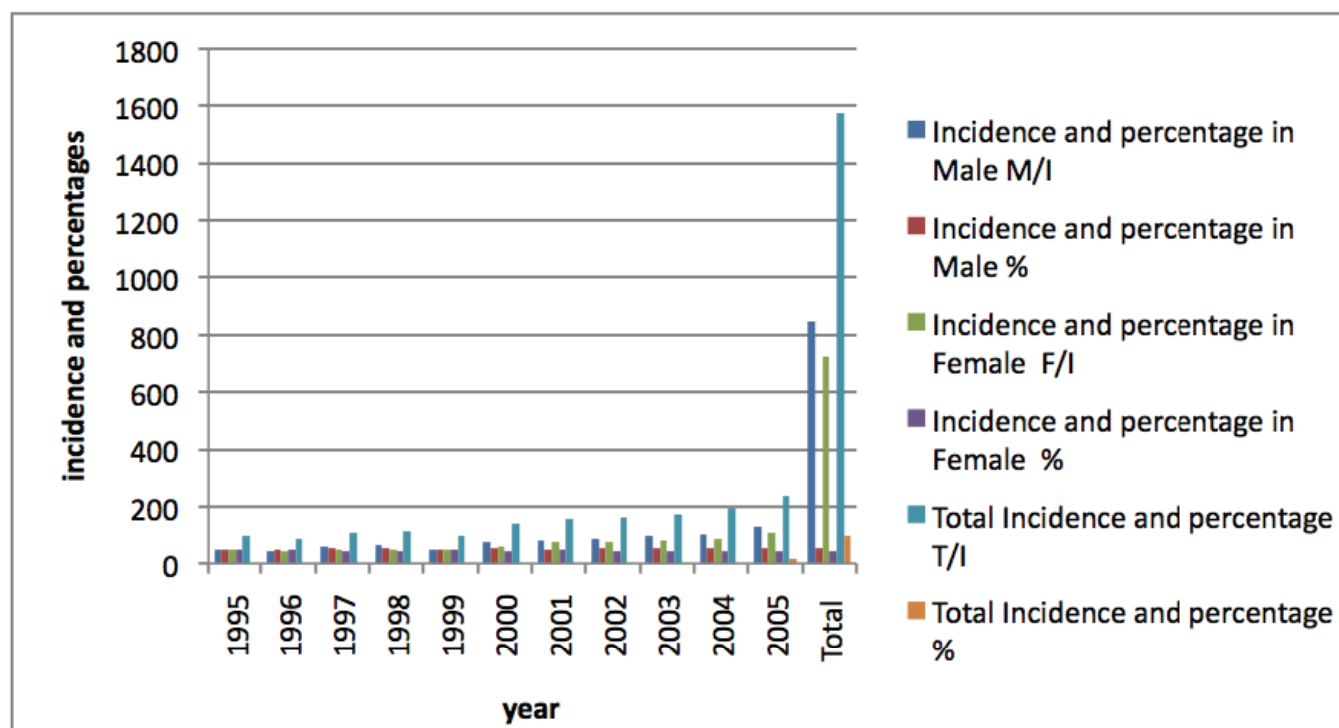
**Figure 1:** Summary of incidence and percentage of hypertension from 1995 to 2005 as seen in Abia State University Teaching Hospital Aba.

Table 2: Summary of Incidence and Percentage of Hypertension from 1995 to 2005 as Seen in Life-Care Hospital Aba

Year	Incidence and Percentage in Male		Incidence and Percentage in Female		Total Incidence and Percentage	
	M/I	%	F/I	%	T/I	%
1995	45	56.2	35	43.8	80	5.4
1996	45	55.6	36	44.4	81	5.5
1997	50	50.6	49	49.5	99	6.7
1998	66	55.0	54	45.0	120	8.2
1999	62	51.7	58	48.3	120	8.2
2000	65	52.0	60	48.0	125	8.5
2001	69	48.3	71	50.7	140	9.5
2002	78	50.3	77	49.7	155	10.6
2003	89	52.7	80	47.3	169	11.5
2004	100	53.2	88	46.8	188	12.8
2005	101	52.9	90	47.1	191	13.1
Total	770	52.5	698	47.5	1488	100

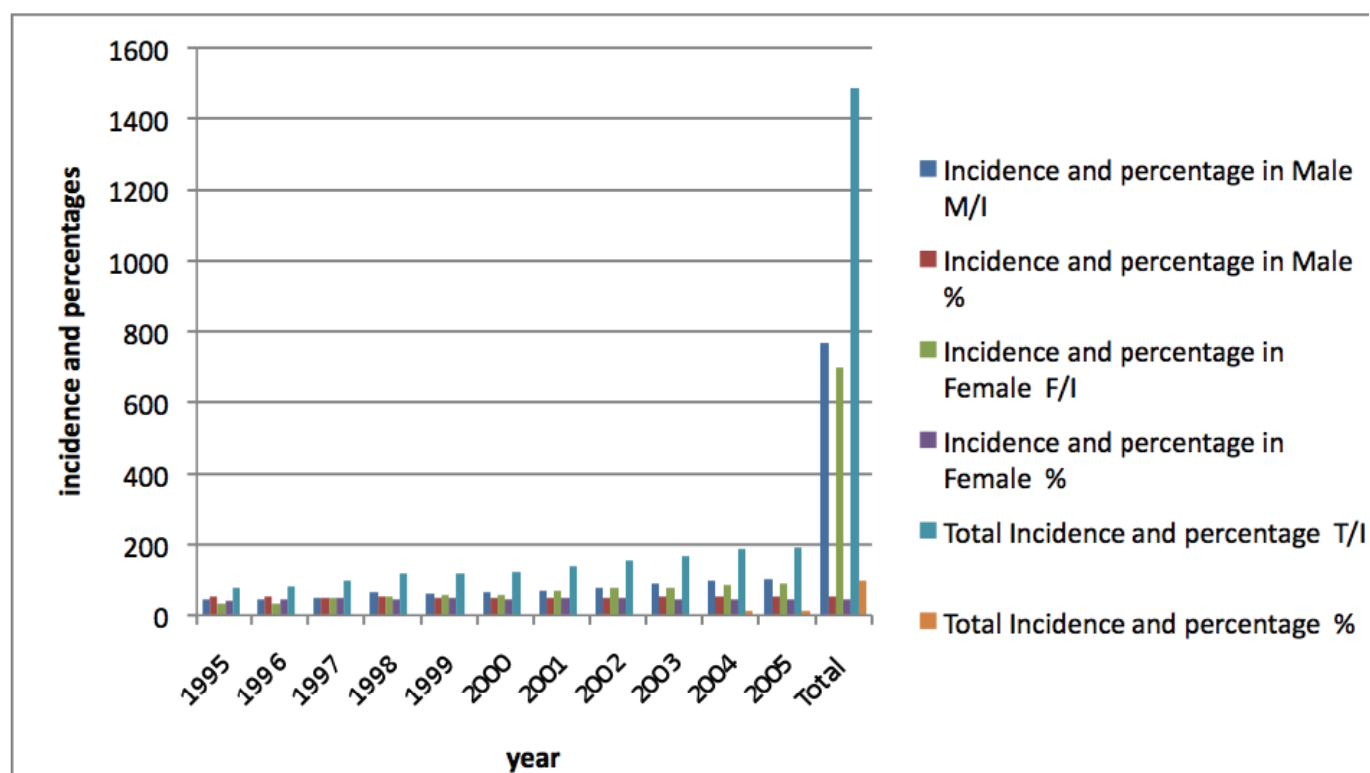
**Figure 2:** Summary of incidence and percentage of hypertension from 1995 to 2005 as seen in Life-Care Hospital Aba.

Table 3: Summary of Incidence and Percentage of Hypertension from 1995 to 2005 as Seen in Living Word Hospital Aba

Year	Incidence and Percentage in Male		Incidence and Percentage in Female		Total Incidence and Percentage	
	M/I	%	F/I	%	T/I	%
1995	10	40.0	15	60.0	25	3.7
1996	16	57.1	12	42.9	28	4.2
1997	16	55.2	13	44.8	29	4.4
1998	20	57.1	15	42.9	35	5.3
1999	23	52.3	21	47.7	44	6.6
2000	26	57.8	19	42.2	45	6.7
2001	48	54.5	40	45.5	88	13.3
2002	47	54.7	39	45.3	86	13.0
2003	45	50.0	45	50.0	90	13.6
2004	55	59.8	37	40.2	92	13.8
2005	52	51.0	50	49.0	102	15.4
Total	258	45.0	306	46.0	664	100.0

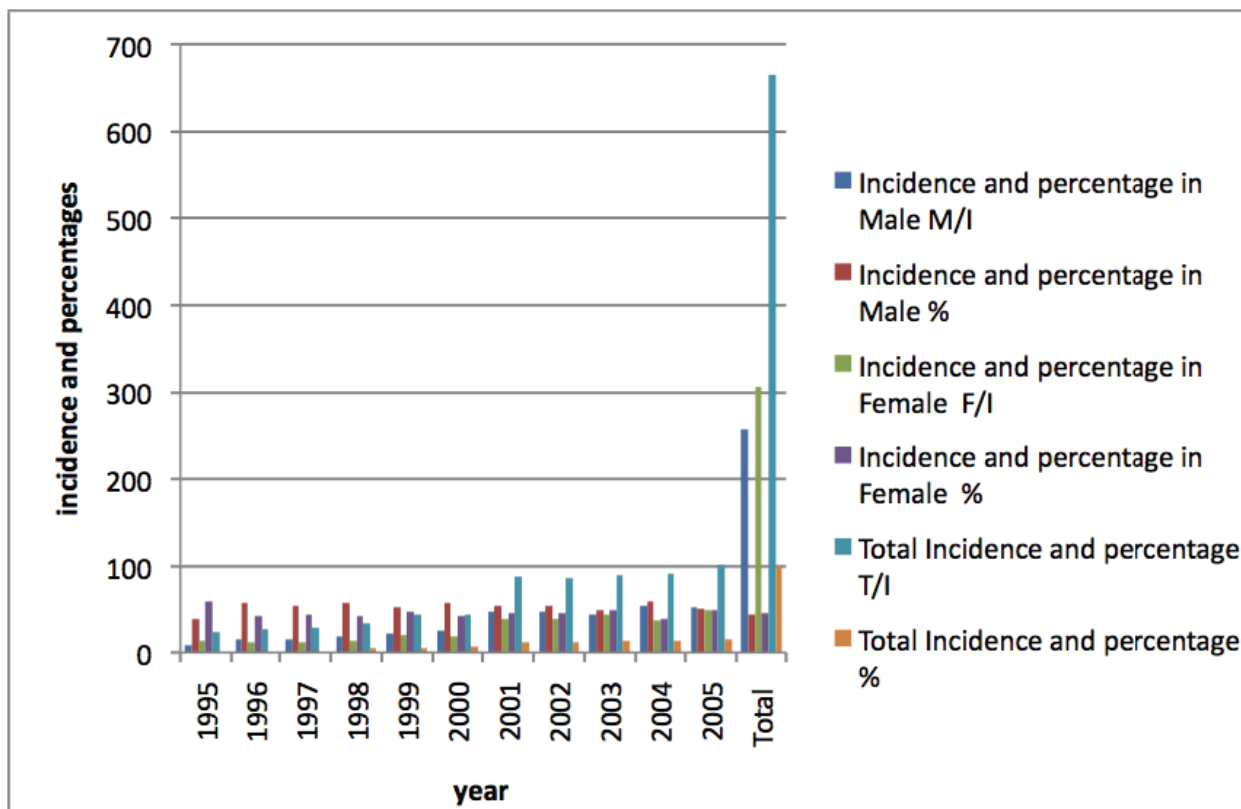
**Figure 3:** Summary of incidence and percentage of hypertension from 1995 to 2005 as seen in Living Word Hospital Aba.

Table 4: Summary of Incidence and Percentage of Hypertension from 1995 to 2005 as Seen in New Lead Hospital Aba

Year	Incidence and Percentage in Male		Incidence and Percentage in Female		Total Incidence and Percentage	
	M/I	%	F/I	%	T/I	%
1995	10	50.0	10	50.0	20	4.8
1996	12	54.5	10	45.5	22	5.2
1997	18	60.0	12	40.0	30	7.1
1998	10	34.5	19	65.5	29	6.9
1999	19	57.6	14	42.4	33	7.8
2000	19	55.9	15	44.1	34	8.1
2001	16	47.1	18	52.9	34	8.1
2002	18	51.4	17	48.6	35	8.3
2003	30	61.2	19	38.8	49	11.6
2004	39	60.7	24	39.3	61	14.5
2005	40	54.1	34	45.9	74	17.6
Total	229	54.4	192	45.6	421	100

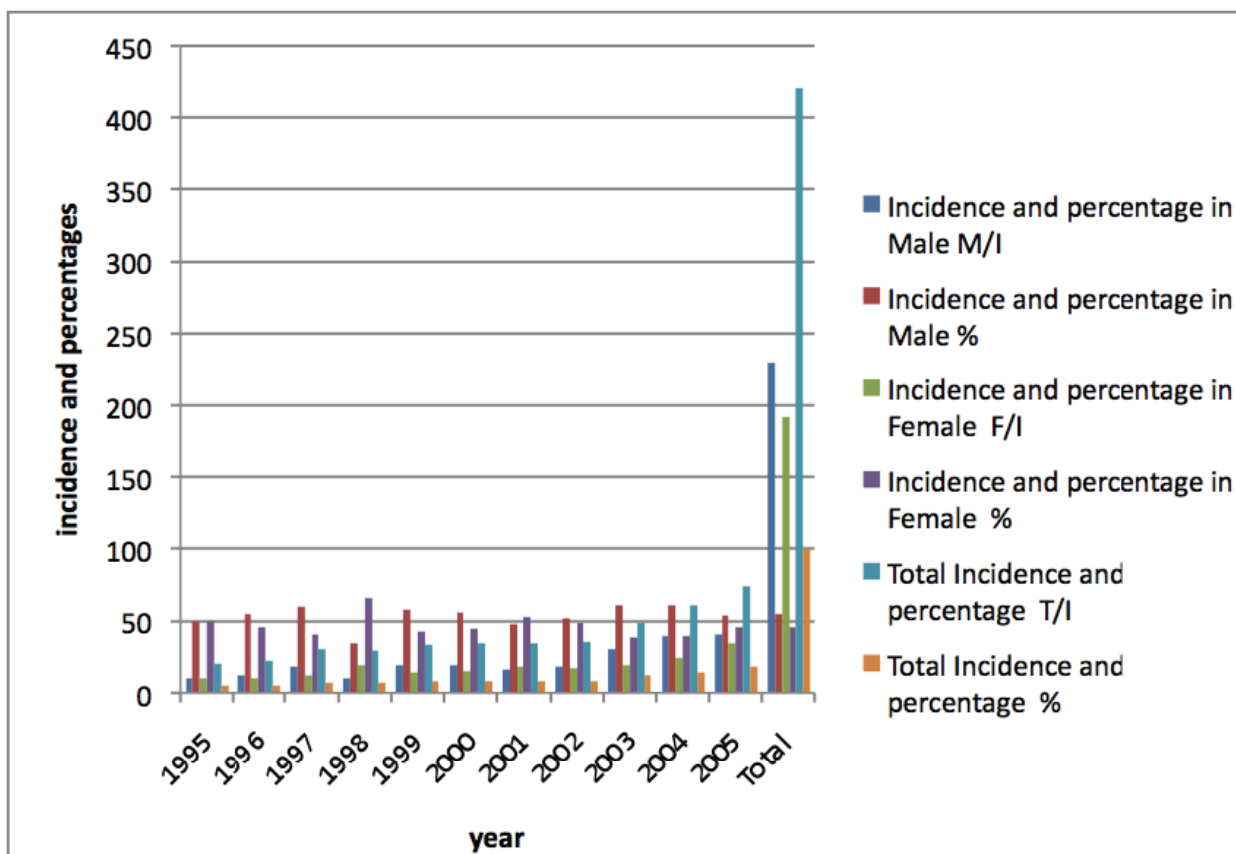
**Figure 4:** Summary of incidence and percentage of hypertension from 1995 to 2005 as seen in New Lead Hospital Aba.

Table 5: Summary of Result from All the Hospitals from 1995 to 2005

Year	Incidence and Percentage in Male		Incidence and Percentage in Female		Total Incidence and Percentage	
	M/I	%	F/I	%	T/I	%
1995	117	52.0	108	48	225	5.5
1996	117	53.2	103	46.8	220	5.3
1997	144	54.3	121	45.7	266	6.4
1998	162	54.0	136	46.0	300	7.3
1999	154	51.9	143	48.1	297	7.2
2000	188	55.0	154	45.0	342	8.3
2001	213	51.1	204	48.9	417	10.1
2002	231	52.5	209	47.5	440	10.7
2003	259	53.6	224	46.4	483	11.7
2004	297	55.7	236	44.3	533	12.9
2005	323	53.4	282	46.6	605	14.7
Total	2205	53.4	1922	46.6	4127	100.0

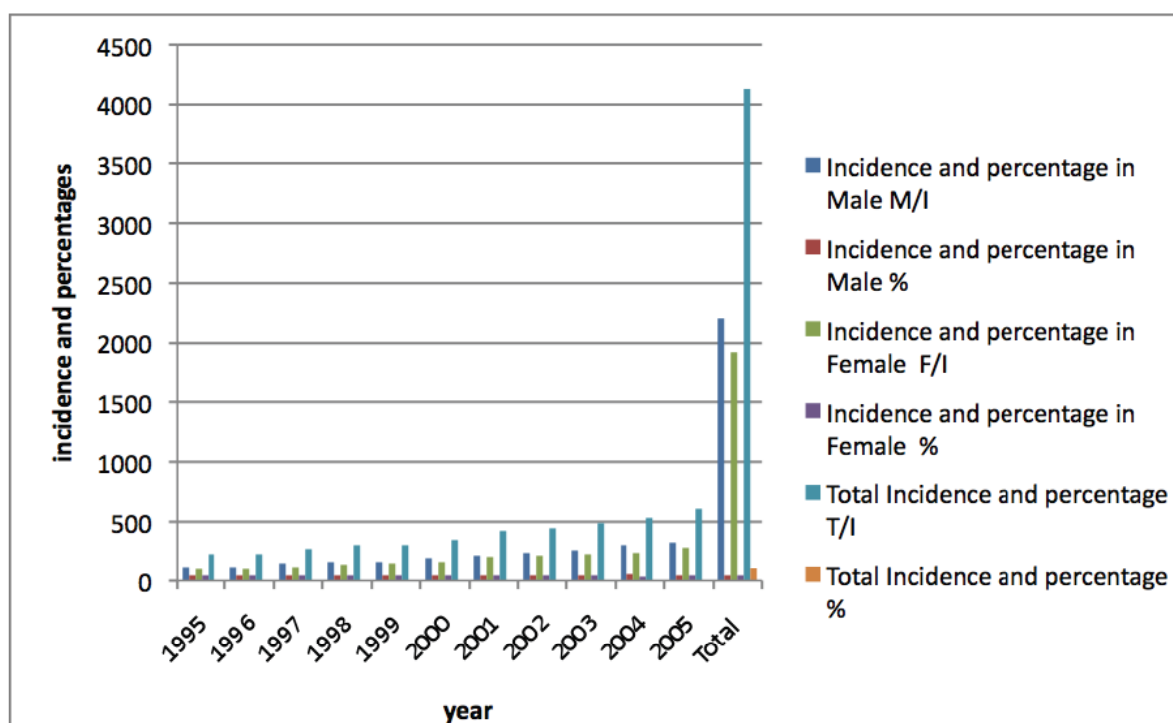


Figure 5: Summary of Result from all the Hospitals from 1995 to 2005.

Therefore, in order to control the growing incidence of hypertension in Abia State, Nigeria and in the world as a whole, there is need for more creation of awareness perhaps in the form of campaign to educate the public about the problem associated with being

hypertensive and the need for a life style modification so to reduce or control the growing incidence of hypertension and maintain a healthy life condition in the nearest future.

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